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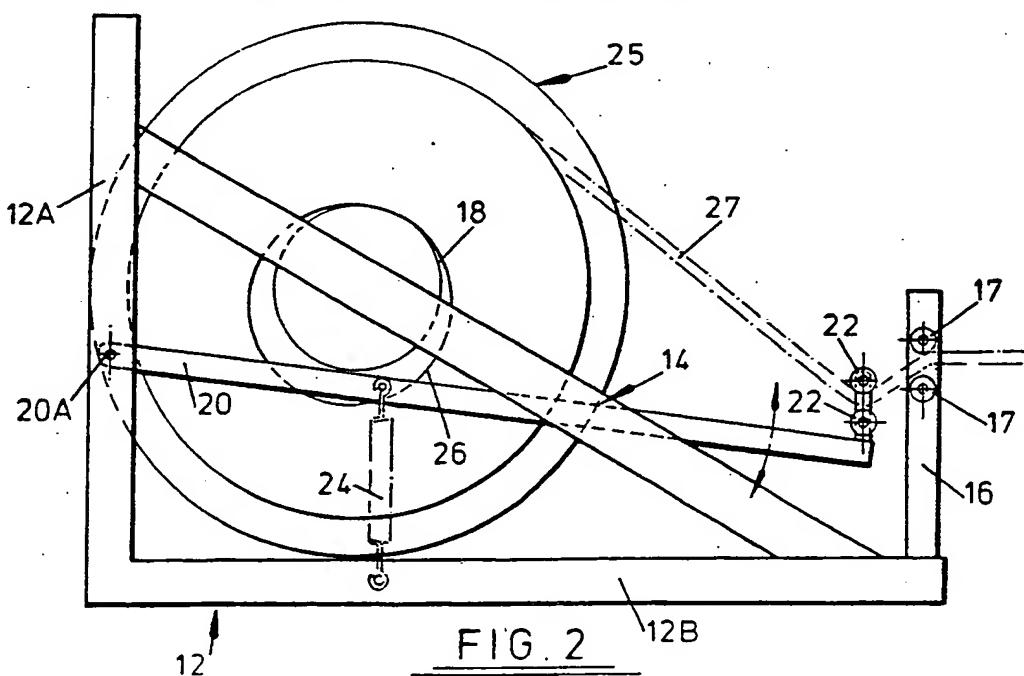
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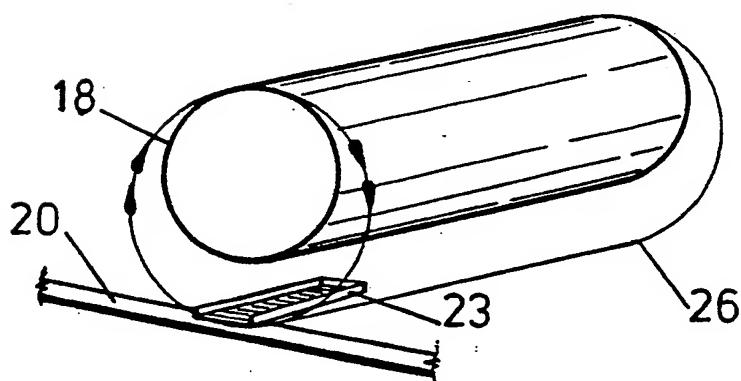
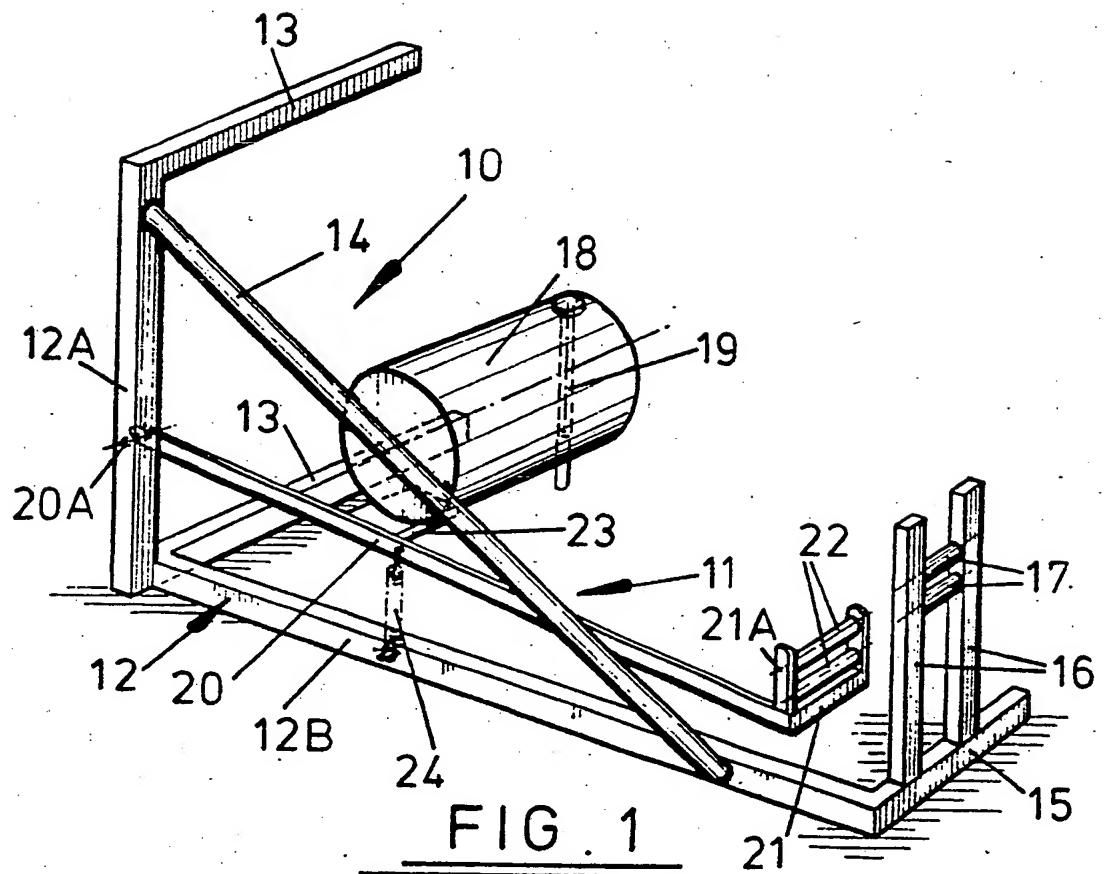
(54) Cable dispenser

(57) The cable dispenser comprises a frame 12A, 12B, 14 supporting a centre 18 on which a cable reel 25 is mounted for unwinding. A brake member carried by lever 14, pivoted at 20A, bears against the cable reel and/or the centre under the bias of spring 24 to prevent reel rotation. A first cable guide 22, 22 pivotal with lever 20 is spaced downstream from the centre in the direction of cable pay-off from the reel. A second cable guide 17, 17 is fixed on the frame at a location downstream of the first cable guide. The arrangement is such that a pulling action on the cable 27 passed through the first and second guides irrespective of the angle of pull releases the brake to permit rotation of the cable reel and paying off of cable therefrom. Spring 24 may be replaced by a weight. The dispenser may be used with frame member 12B vertical.



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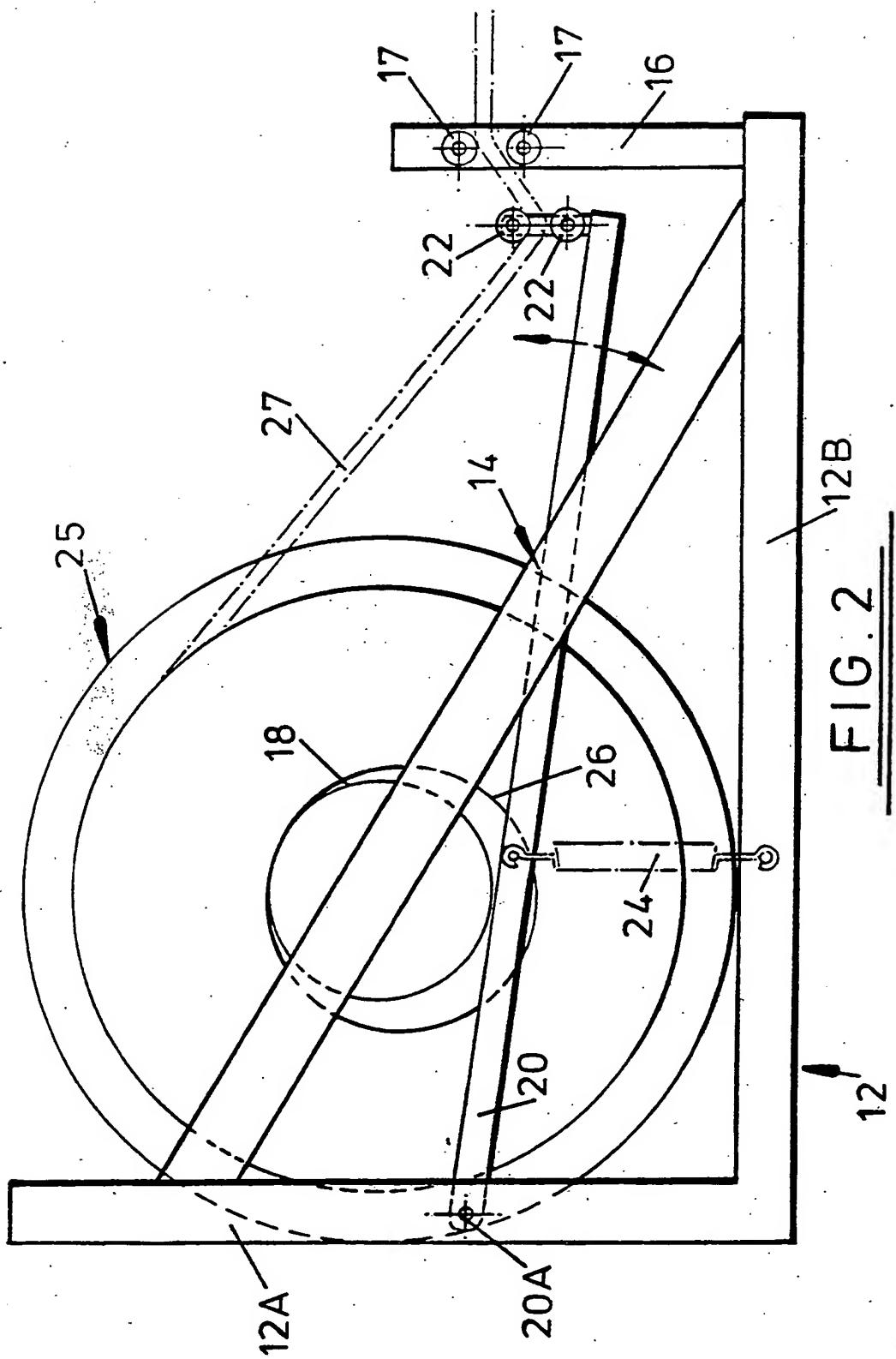


FIG. 2

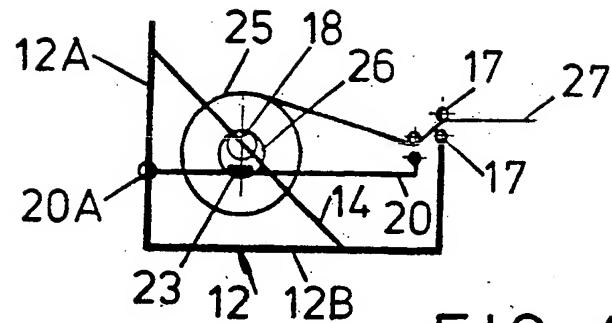


FIG. 4

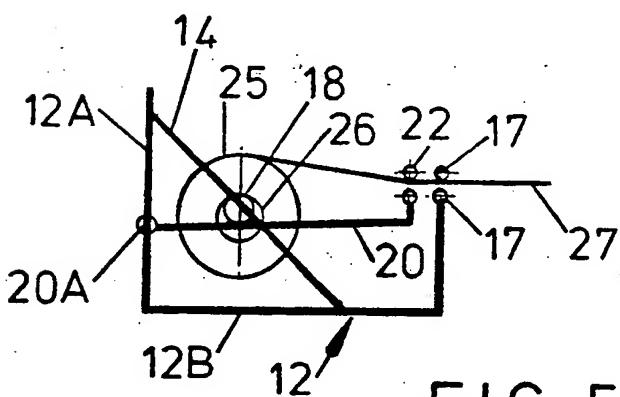


FIG. 5

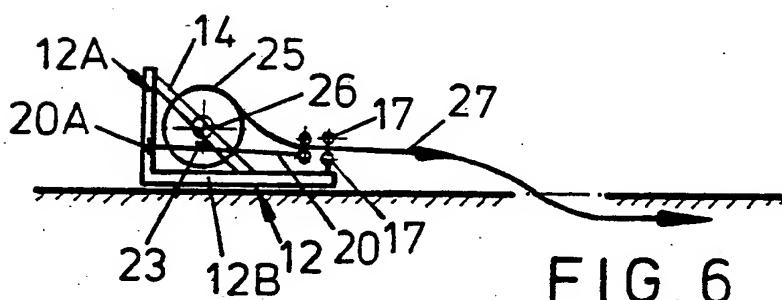


FIG. 6

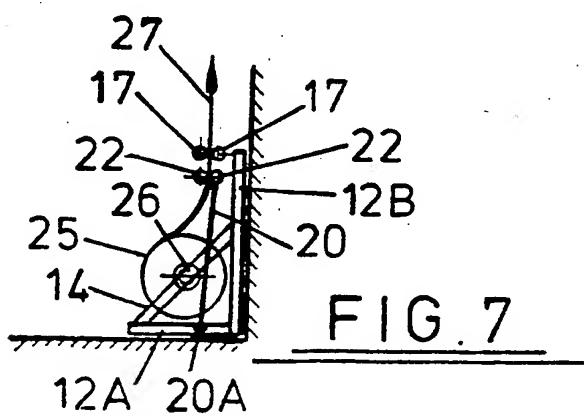


FIG. 7

CABLE DISPENSING APPARATUS

This invention relates to a cable dispensing apparatus especially but not exclusively for use with reels or drums of electrical cable.

The terms "cable" or "electric cable" used herein and in the accompanying claims is to be construed as including any elongate material normally wound on a reel or drum and adapted to be dispensed or let-off such reel or drum. Examples of such material are electrical cable or conductors as aforesaid, rope, wires, tapes and chains.

A known cable let-off device as disclosed in GB-A-1590896 comprises a trailer chassis mounting a shaft on which a cable drum can be mounted. The cable drum has side flanges which serve as a brake drum or surface adapted to be contacted peripherally by a brake pad. The latter is supported at one end of a lever arm pivoted between its ends and mounting at its other end a pair of jockey wheels.

The drum brake constituted by the drum side flanges and the brake pad is controllably operated by a weight-operable means constituted by the lever arm and cable guide.

In use, cable from the drum is paid-off through the cable guide, i.e. between the jockey pulleys.

Normally, with the let-off device inoperative, the weight of the lever arm, the cable guide and the cable passing through the latter caused the brake pad to press against the cable drum side flanges and thus resist rotation of the cable drum.

To pay off a length of cable it is necessary for a user to pull upwardly on the length of the cable which has passed through the cable guide which elevates the latter and pivots the lever to move the brake pad away from the drum side flanges. The cable drum can then rotate to allow the required length of cable to be paid-off.

Release of the cable re-applies the brake.

It is an object of the present invention to provide

cable dispensing or paying-off apparatus which permits cable to be dispensed or paid-off irrespective of the angle of pull and which is operationally more versatile than the prior art cable let-off device.

According to the present invention there is provided a cable dispensing apparatus comprising a frame supporting a centre adapted for rotatably mounting a cable reel, brake means movably mounted on the frame to cooperate with a cable reel mounted on the centre and/or with the centre to prevent rotation of the cable reel, a first cable guide spaced downstream from the centre in the direction of cable pay-off from the cable reel and movable with the brake means, and a second cable guide fixed on the frame at a location downstream of the first cable guide, the arrangement being such that a pulling action on a length of cable passing through the first and second guides irrespective of the angle of pull releases the brake means to permit rotation of the cable reel and paying off of cable therefrom.

An embodiment of the present invention will now be described by way of example with reference to the accompanying drawings, in which:-

Fig. 1 is a perspective view of the cable dispensing apparatus according to the present invention;

Fig. 2 is a fragmentary side elevation of the reeling apparatus, to an enlarged scale, showing a reel of electric cable in position on the apparatus;

Fig. 3 is a detailed perspective view of part of the apparatus and a cable reel centre;

Figs. 4 and 5 are respectively diagrammatic side views of the apparatus showing the relative position of the components of the apparatus and the cable reel or drum in non-winding and unwinding positions respectively; and

Figs. 6 and 7 are respectively diagrammatic views of the apparatus in use with a cable being laid under a floor and up a wall.

The cable dispensing apparatus generally indicated at

10 comprises a frame 11 of welded steel construction for example.

The frame 11 comprises an L-shaped structure 12 having a short limb 12A and a longer limb 12B. Parallel lateral frame members 13 extend from each end of limb 12A, and a diagonal strut 14 connects the two limbs 12A, 12B of the L-shaped member 12 to provide stability. A laterally extending frame member 15 is provided, at the other end, of the limb 12B of the L-shaped structure 12 and a pair of support members 16 are connected to and extend at right angles from the frame member 15. The support members 16 are parallel and spaced apart and support a pair of guide rollers 17 defining a fixed position cable guide.

A fixed centre or axle 18 is welded to the diagonal strut 14 at one end thereof, and, at its other end, has a removable retaining pin 19, the purpose of which will be described later. The fixed centre 18 is in the form of a steel tube.

The frame 11 also comprises a lever 20 pivoted at one end intermediate the ends of the limb 12A of the L-shaped structure 12 as indicated at 20A and extending to a position adjacent the support members 16. At its free end the arm 20 is provided with a lateral extension 21 to which is connected at right angles thereto a pair of parallel support members 21A between which extend a pair of guide rollers 22 defining a variable position cable guide.

A brake plate 23 is welded to the lever 20 intermediate the ends thereof at a location adjacent the fixed centre 18 and the lever 20 at this location is connected by a spring 24 to the limb 12B of the L-shaped structure 12. This spring 24 tends to pull the lever 20 towards the limb 12B.

To fit a reel or drum 25 of electric cable 27 on the fixed centre 18 the retaining pin 19 is firstly removed, and the reel 25 which has a hollow centre 26 (see Fig. 2 for example) which is engaged in a loose fitting manner on the fixed centre 18.

When the reel 25 is fitted onto the fixed centre 18 the retaining pin 19 is re-engaged in the fixed centre 18 to prevent lateral removal of the reel 25 from the fixed centre 18.

The cable 27 is threaded through the position-variable guide rollers 22 and then through the fixed position guide rollers 17.

In this condition, i.e. no pull being applied to the cable 27, the brake plate 23 due to the action of the spring 24 is pulled against the inner surface of the hollow centre 26 thus preventing rotation of the reel 25 relative to the fixed centre 18.

When, however, an electrician, for example, pulls on the cable 27 the lever 20 is caused to move to a position where the brake plate 23 is raised clear of the surface of the hollow centre 26 (see Fig. 5) and the position-variable cable guide 22 aligns with the fixed-position cable guide 17, or substantially so, due to the pulling action on the cable 27.

These actions occur irrespective of the angle of pull on the cable 27, i.e. upwardly, horizontally or downwardly, due to the presence of the fixed-position cable guide 17. The pulling action on the cable 27 causes same, it will be manifest, to unreel or be payed-off of the reel 25.

When the pulling action on the cable 27 is discontinued, the spring 24 acts to pivot the arm 20 to a position where the brake plate 23 re-engages the surface of the hollow centre 26, thus arresting rotation of the reel 25.

The frame 11 allows versatility in use of the cable dispensing apparatus. It can be used horizontally (see Fig. 6) when, for example, pulling the cable 27 along and under a floor, or vertically (see Fig. 7) when, for example, pulling a cable 27 up a wall.

In each case, the cable 27 can be pulled off the reel 25 single handed at any angle of pull without kinking, and, as aforesaid, rotation of the reel or drum 25 is arrested

immediately the pulling action on the cable 27 is discontinued.

The means for retaining the cable reel 25 on the fixed centre 18 may be other than a retaining pin 19. It may, for example, be an end plate or flange releasably secured to the fixed centre 18 and dimensionally larger than the hollow centre 26 of the reel 25.

The centre 18 may be rotatably mounted in bearings on the frame 11, the reel 25, in this instance, rotating with the centre 18 and the brake plate 23 acting on a surface of the centre 18 or a surface associated or connected therewith.

The brake plate 23 may be applied, in the embodiment described with reference to the drawings, to a surface of the reel 25 other than the inside of the hollow centre 26. It may, for example, be applied downwardly on to the periphery of an end plate or flange of the reel 25, or to a braking surface associated or connected with the reel 25.

The brake-applying means may be other than a spring, a weight for example.

CLAIMS

1. Cable dispensing apparatus comprising a frame supporting a centre adapted for rotatably mounting a cable reel, brake means movably mounted on the frame to cooperate with a cable reel mounted on the centre and/or with the centre to prevent rotation of the cable reel, a first cable guide spaced downstream from the centre in the direction of cable pay-off from the cable reel and movable with the brake means, and a second cable guide fixed on the frame at a location downstream of the first cable guide, the arrangement being such that a pulling action on the length of cable passing through the first and second guides irrespective of the angle of pull releases the brake means to permit rotation of the cable reel and paying off of cable therefrom.

2. Apparatus as claimed in claim 1 comprising a lever pivoted at or adjacent one end thereof to the frame and mounting at or adjacent the other end thereof the first cable guide with the brake means carried on the lever intermediate its ends.

3. Apparatus as claimed in claim 2 in which means is provided to urge the brake means into contact with the cable reel and/or the centre.

4. Apparatus as claimed in claim 3 in which the urging means is a spring connected between the lever and the frame.

5. Apparatus as claimed in any one of claims 2 to 4 in which the brake means is a braking plate adapted to coact with a hollow centre of the cable reel to resist rotation of the latter.

6. Apparatus as claimed in any one of claims 1 to 5 in which each cable guide is constituted by a pair of rollers between which cable from the cable reel passes in use.

7. Apparatus as claimed in any one of claims 1 to 6 in which the frame comprises an L-shaped structure which

permits the apparatus to be used in either a horizontal or a vertical disposition.

8. Cable dispensing apparatus, substantially as hereinbefore described with reference to the accompanying drawings.

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